

ABSTRACT

Laser projection system suitable for commercial motion picture theaters and other large screen venues, including home theater, uses optical fibers to project modulated laser beams for simultaneously raster scanning multiple lines on screen. Emitting ends of optical fibers are arranged in an array such that red, green and blue spots are simultaneously scanned onto the screen in multiple lines spaced one or more scan lines apart. Use of optical fibers enables scanning of small, high resolution spots on screen, and permits convenient packaging and replacement, upgrading or modification of system components. Simultaneous raster scanning of multiple lines enables higher resolution, brightness, and frame rates with available economical components. Fiber-based beam coupling may be used to greatly enhance the flexibility of the system. Alternate embodiments illustrate the flexibility of the system for different optical fiber output head configurations and for different types, sizes, and arrangements of laser, modulation, and scanning components.